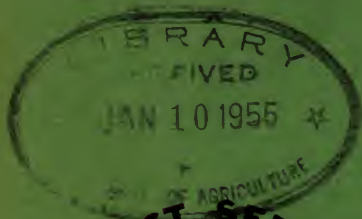


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FIRST AID GUIDE



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SAVE SECONDS AND SAVE LIVES

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UNITED STATES DEPARTMENT OF AGRICULTURE
FOREST SERVICE



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May 3, 1954

FOREWORD


This booklet is the result of years of planning, suggestions, and writeups by many people in the field.

Due to the isolated nature of our work, it is sometimes necessary to do more for an injured or sick person, than if a doctor were readily available. Often we have to improvise the most practicable methods and materials on hand when tragedy strikes. Certain types of injuries occur more frequently than others in our work. This Guide offers solutions to these typical Forest Service problems.

We hope the Guide will stimulate more and better First Aid instruction. We have found that people trained in first aid have significantly fewer injuries than others. In addition, first aid prepares them for emergencies.

We are indebted to Mr. Earl H. Breon, Assistant Director of First Aid Service, American National Red Cross, and to Dr. Melvin T. Johnson, Chief of the Division of Employee Health in the U. S. Department of Agriculture for their detailed review and many helpful suggestions.

We have freely used the information and sketches in the American Red Cross First Aid Textbook.


Seth Jackson
Safety Officer
Chief's Office

First Aid Policy

921 GENERAL (Taken from F. S. Safety Code)

First Aid is the immediate and temporary care of an injured or suddenly ill person until a doctor can be obtained.

.1 Course requirements:

- a. All supervisory personnel in direct charge of work crews shall possess a working knowledge of first aid.
 - 1. They shall have an American Red Cross Standard Course Certificate or equivalent.
 - 2. Thereafter their knowledge shall be kept current through Forest Service or equivalent refresher courses, taken at not less than three year intervals.
- b. All other supervisory personnel, either seasonal or regular, who may be called upon to aid injured employees or citizens in areas under Forest Service jurisdiction, should receive the training outlined in .1 above.
- c. Seasonal personnel needing first aid training who cannot take .1a above, shall take a Forest Service short course.

.2 Sulpha powder or ointment shall be used only under the direction of a doctor.

922.4 Physicians designated by the U. S. Bureau of Employees' Compensation shall be used unless none is available.

Our policy is to conduct First Aid courses on official time.

Principles of First Aid

THESE 6 STEPS SHALL BE TAKEN WITH SERIOUSLY INJURED PERSONS:

1. Examine victims thoroughly.



2. Treat, in this order, immediately:

SERIOUS BLEEDING

See page 5 .



STOPPAGE OF BREATH

See page 8 .



POISONING See page 10.



SHOCK See page 18.
Keep victim lying down.



3. Send for help. Get doctor or ambulance.
Alert hospital if necessary.

4. Give nothing to eat or drink to an unconscious or internally injured person.
5. Make victim comfortable. Don't let him see injury. Be calm, cheerful. Keep onlookers away.
6. Move only when absolutely necessary. Use prearranged plan and approved methods. See page 48.



WOUND TREATMENT

Any wound, no matter how small, should be touched only with a sterile pad or the best substitute, such as a clean folded handkerchief, sterilized with a match, boiling water, or alcohol. Don't breathe on wounds. See page 36.

1. Always wash hands thoroughly, if possible, before treating any wound.



2. Never touch wound with hand, clothing, or any unclean material.



3. Wash wound with soap, then do not touch it.



Serious Bleeding

CUT ARTERY OR VEIN

SYMPTOMS:

1. Cut artery, bright red blood spurts or wells up.
2. Cut vein, dark red blood flows steadily or oozes.

FIRST AID:

1. Remove or cut clothing from wound.
2. Always apply pressure at once.
Seconds count. Loss of 2 pints of blood can be fatal.
 - a. Apply direct firm strong pressure preferably on sterile dressing over wound first. Direct pressure on the wound will seldom fail to control bleeding if enough pressure is used.
 - b. If this fails to stop flow, apply firm strong pressure to nearest pressure point. See sketches.



TWO MOST
EFFECTIVE
PRESSURE
POINTS.



c. If this fails, and the bleeding is life threatening:

(1) Apply tourniquet (TNT) close to wound but with unbroken skin between TNT and wound.

(2) Apply TNT tightly enough to stop bleeding.

(3) Do not release TNT, no matter how long in place, except by a doctor.

(4) Use triangular bandage, towel, belt or flat material about 2 inches wide, wrapped around limb twice, then knotted.

(5) Attach note to victim, giving TNT location and hour of application.



3. Additional instructions:

a. Elevate injured part unless broken.

b. Bandage tightly over sterile pad on wound.

c. Never give stimulants until bleeding is stopped.

d. Keep victim quiet.

e. To stop bleeding in palm of hand place sterile pad in palm, close fingers over it, and bandage tightly.

f. Also see WOUNDS page 36.



INTERNAL BLEEDING

SYMPTOMS:

1. Restlessness
2. Anxiety
3. Thirst
4. Pale face
5. Weak, rapid pulse
6. Weakness



FIRST AID: Also, see page 45.

1. Keep victim flat on back, Exception:
If he cannot breathe due to lung puncture, prop up only slightly.
2. Turn his head to side for vomiting.
3. Keep him quiet, reassured.
4. Move him only in lying position.

NOSE BLEED

1. Victim sits with head thrown back, breathing through mouth, clothing at neck loosened.
2. If bleeding from one nostril only, press this nostril to middle partition for 5 minutes.
3. Apply cold, wet cloths to nose.
4. Pack sterile gauze back into nostril.



Stoppage of Breath

SMOKE, GASES, DROWNING

SYMPTOMS:

1. Unconscious
2. Breathing stopped
3. Face and lips blue, flushed or pale
4. Pulse weak or absent; heart erratic

FIRST AID: ARTIFICIAL RESPIRATION BY BACK PRESSURE-ARM LIFT METHOD:

PREPARATION: SAVE SECONDS AND SAVE LIVES

1. Place victim face down, head lower than feet, loosen clothing.
2. Bend his elbows and place hands one on top of other.
3. Turn face to side, chin up, cheek upon hands.
4. Check mouth to be sure air passage is not blocked.

APPLICATION: ESTABLISH RHYTHM

1. Kneel on one or both knees at side of victim's head, facing him, place heels of hands just below line between arm pits, thumb tips touching, fingers downward and outward.
2. Rock forward on straight elbows, with steady pressure on back.
3. Rock backward, sliding hands to victim's arms, just above elbows, grasp arms, continuing to rock backward.

POSITION



PLACE HANDS



APPLY PRESSURE



RELEASE PRESSURE

4. Raise arms until tension is felt, then lower arms. This completes the cycle, which should be repeated 12 times a minute for several hours, if necessary, or until doctor arrives.
5. Treat for shock. See page 18.
6. Keep victim lying down, quiet and warm for 24 hours.



ELECTRIC SHOCK AND LIGHTNING

SYMPTOMS:

Same as for smoke above, except there may be burns, and body may be rigid at first.

FIRST AID:

1. Always protect yourself against shock.
2. If victim is on pole and rescue may take several minutes, compress his chest 12 times a minute, while rescue tackle is being adjusted.
3. If victim is on wire on ground, remove wire with dry pole or rope before touching him.
4. Apply Back Pressure-Arm Lift Method as above, then treat burns. See page 20.



CHOKING

1. Hold victim upside down or bend forward as far as possible, then give sharp slap on back.
2. If breathing stops, apply Back Pressure Arm Lift Method as above.

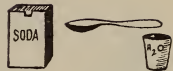


Poisoning

SYMPTOMS:

1. Pain in stomach and vomiting;
diarrhea with food poisoning.
2. Flushed or bloated face
3. Mouth may be burned
4. Convulsions
5. Unconsciousness

POISONS NOT ACID OR ALKALI



1. DILUTE: Give large amounts of fluid, 4 to 7 glasses of solution of 1 teaspoon of either baking soda or salt in 1 glass of warm water, warm dish water - or milk if caustics like lye or ammonia have been taken.



2. WASH OUT: Induce vomiting by tickling throat.
3. Give antidote, if one is known.
4. Give heaping tablespoon of Epsom Salts in water.



ACIDS

1. Avoid vomiting if possible.
2. Neutralize with alkali such as baking soda, magnesia, chalk, in water.
3. Give milk, olive oil, or egg white.



ALKALIES

1. Avoid vomiting if possible.
2. Neutralize with weak acid such as lemon juice or vinegar.
3. Give milk.



FOOD POISONING

PREVENTION:

See Safety Code Sections 371-373 and 611-612.

SYMPTOMS:

1. Uncomfortable feeling in upper abdomen
2. Pain and cramps
3. Nausea and vomiting
4. Diarrhea
5. Prostration
6. Unconsciousness in severe cases

FIRST AID:

1. Call doctor.
2. Never give a physic unless ordered by doctor.
3. Dilute and wash out same as for poisons not acid or alkali, page 10.
4. Keep victim warm, in bed.
5. If vomiting persists, give small drinks from glass of water containing teaspoon of soda.
6. Give him black coffee or strong tea.

Poison Snakes, Insects, Plants

SNAKE BITE

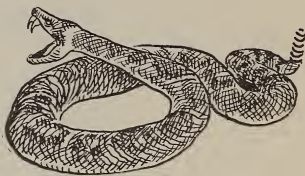
PREVENTION:

1. Wear high shoes.
2. Watch for snakes.
3. Carry snake-bite kit.
4. Study Safety Code Section 954.3.



SYMPTOMS:

1. Immediate pain
2. Swelling, purple color
3. 1 or 2 fang puncture points
4. Weakness, short breath
5. Rapid, weak pulse
6. Vomiting, faintness



FIRST AID: REMEMBER CONSTRUCTION, INCISION, SUCTION

1. Victim must remain absolutely quiet.
2. Tie a band around limb, above bite and above swelling to restrict poison spread. Handkerchief, soft belt, shoelace will do. Loosen it a little if limb gets cold or numb. Remove band for a minute every 15 minutes.
3. Sterilize knife over flame, then make 1/4 inch cross cut incisions through each fang mark.

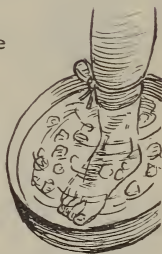


4. Apply suction to incisions until doctor arrives. Lacking a suction pump, suck out blood and venom, then spit it out, unless open sores are in mouth. Continue for 30 minutes.
5. When swelling spreads about 3 inches above bite, move band above swelling if necessary, make more incisions there, then apply suction.
6. Treat for shock.
7. Give plenty of drinking water.
8. If struck by snake when you are alone, apply band, cuts, suction if possible. If not, stroke down towards fang marks and squeeze out blood and venom. Then walk slowly toward help.



NOTE: A promising new method for poisonous bites is called the L-C Treatment:

1. A tourniquet is placed directly above the bite.
2. The bitten area is placed in a pail containing half-sized ice cubes, or ethyl chloride is sprayed on the wound area. (This chemical should be applied only by a doctor.) Continue for about 6 hours.
3. The TNT is removed not more than 10 minutes after the ice treatment starts, and left off.
4. An incision is made only when a very large snake bites.



The L-C (Ligature-Chilling) method is still experimental, but can be used if approved by a doctor.

INSECT STING



1. Remove sting.
2. Apply paste of baking soda and cold cream.
3. Cold applications will relieve pain.
4. Calamine lotion will relieve itching.



BLACK WIDOW SPIDER, SCORPION BITES

PREVENTION: Study Safety Code
Section 954.2.

SYMPTOMS:

1. Slight swelling, redness, tiny red spots
2. Immediate burning, spreading pain
3. Hard abdomen
4. Fever, sweating, nausea

FIRST AID:

1. Keep victim lying down, quiet and warm. If he must be moved, use a stretcher.
2. Give deep hot tub bath to relieve cramps.
3. Get doctor immediately.
4. See page for L-C Treatment.



CHIGGER, RED BUG BITE

PREVENTION: Study Safety Code Section 954.2.

SYMPTOMS:

1. Localized itching, redness, usually under belt or other tight clothing

FIRST AID:

1. Apply calamine.
2. As preventative, rub dimethyl phthalate or flowers of sulphur on ankles and socks.



ROCKY MOUNTAIN SPOTTED FEVER

TICK BITE

PREVENTION:

1. Vaccination with spotted fever serum is sometimes used.
2. Examine body and clothes after any exposure and always remove ticks after each shift.
3. Have partner inspect back.
4. Remove ticks by forceps or heat from match. If mouth parts break off, remove them from flesh.
5. Study Safety Code Section 954.2.

SYMPTOMS OF DISEASE:

1. Chills and fever
2. Sweating
3. Pains in bones, muscles, joints
4. Back and headaches



5. Coughing, vomiting, weakness
6. Rash appears in 2 to 4 days

FIRST AID:

1. Early doctor treatment.
2. Complete rest.

PAJAROELLA TICK BITE

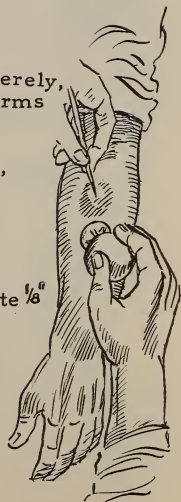
This is a relatively new malady occurring so far only in Southern California oak forests. Tick is about $3/16$ inch long, mottled gray, hard leathery back. Ticks bite fire fighters who are cold trailing firelines, or resting in oak leaves. No preventive is yet known.

SYMPTOMS:

1. Tick bites, then drops off.
2. Slight prickling sensation at first.
3. 6 to 24 hours later bite itches severely, oozes serum, and a dark circle forms around bite.
4. Bite area becomes a running sore, for 4-5 weeks, with high danger of infection.

FIRST AID:

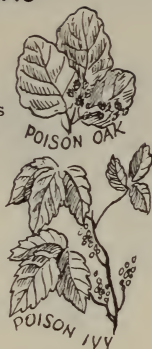
1. When itching is first felt, lance bite $1/8$ " and apply suction for 20 minutes.
2. Apply tincture of merthiolate, zephiran, or alcohol, sterile pad and bandage.



POISON OAK-IVY-SUMAC

PREVENTION:

1. Wash thoroughly with thick soap suds (yellow laundry soap best) in hottest possible water, then alcohol.
2. Wash clothing in thick hot suds.
3. Destroy plants wherever practicable.
4. Avoid smoke from burning plants.
5. Study Safety Code Section 954.1.



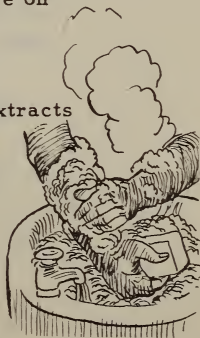
SYMPTOMS:

1. Skin red, swollen
2. Small blisters, which may form large blisters later
3. Violent itching



FIRST AID:

1. Wash as above under PREVENTION
2. Make paste by heating soap and water to consistency of lard, apply thickly to rash, allow it to dry, and leave on overnight.
3. Or use calamine solution.
4. Consult doctor about injecting extracts of poison ivy or oak to produce resistance to the poison.



Shock

SHOCK is a depressed state of all body functions caused by injury.

Unless treated, the condition often results in death, although the injury itself would not be fatal.

TREAT FOR SHOCK IN ANY INJURY CASE.

FACTORS CONTRIBUTING TO SHOCK:

1. Exposure
2. Pain
3. Rough handling
4. Improper transportation
5. Loss of blood
6. Fatigue
7. Broken bones and internal injuries

SYMPTOMS:

1. Symptoms usually develop gradually and may not be noticeable at first.
2. Skin pale, cold, moist, clammy.
3. Eyes vacant, lack luster, pupils dilated.
4. Breathing shallow, irregular - air hunger.
5. Nausea, faintness, or even unconsciousness.
6. Pulse weak, irregular, rapid, or absent in extreme cases.



FIRST AID:

1. POSITION: Keep victim lying flat.
Raise legs 12 to 18 inches, unless head is injured or chest is punctured.

2. HEAT: Keep victim only warm enough to prevent shivering. Conserve body heat by blanket underneath.



3. FLUIDS: Give a cup of warm water, milk, tea, or coffee, unless victim is nauseated or unconscious, injured, or an operation is expected.

4. Additional instructions:

- a. Keep victim quiet and undisturbed.
- b. If in intense pain inject 100 milligrams of demerol, if available, according to directions on packet. Otherwise, give 1 or 2 five-grain aspirin tablets with water every 4 hours.
- c. If injury is extremely serious, notify doctor that plasma may be needed.
- d. Arrange for training with local doctors in use of demerol and plasma where possible before the field season.

Heat Injuries



BURNS AND SCALDS

SYMPTOMS AND CLASSIFICATION:



1. First degree, skin reddened.
2. Second degree, skin blistered.
3. Third degree, skin cooked or charred, may extend to underlying tissue.



FIRST AID:

For small first and second degree burns covering up to 1% of body surface (size of hand):



1. Place sterile gauze over burned area.
2. Bandage entire area snugly.
3. Rebandage only after 3 days.



For large burns of any degree:

1. If doctor or hospital is available within an hour or less:

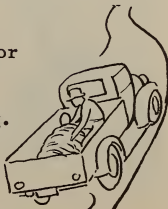


- a. Treat for shock.
- b. Rush to hospital, untreated.



2. If in isolated area:

- a. Remove clothing from burn, cut around where it sticks, for doctor to remove later.
- b. Cover burn with sterile dressing.
- c. Cover this with 8 to 10 layers of loose sterile or clean dressing.



- d. Dress burn so it cannot touch burned or unburned skin.
- e. Bandage snugly so there is moderate pressure on burn.
- f. Treat for shock.
- g. Control pain by hypodermic injection of 100 milligrams of demerol, if available, according to directions on packet. See page 19.



- (1) If pain persists, repeat in 45 minutes, then every 2 hours.
- (2) Do not use demerol for skull fractures, or in case of illness.

- h. If victim is conscious, he should drink all he can of solution containing $\frac{1}{2}$ teaspoon baking soda and 1 teaspoon of salt to 1 quart of water.
- i. Plasma is very important in early treatment of burns, so notify doctor that it may be needed.



j. DO NOT

- (1) Touch burn with fingers.
- (2) Breathe on burn.
- (3) Apply antiseptic.
- (4) Break or drain blisters.
- (5) Change dressing. Doctor should do this.

NOTE: Large amounts of salty fluids leak through burns. They must be put back into the body or the person's life is in danger. Victim may drink up to 10 quarts of salt and soda in water, guided by his thirst. REMEMBER. SHOCK IS THE GREAT KILLER IN BURNS.

CHEMICAL BURNS

1. Flush thoroughly with water to remove all of chemical.
2. Treat like other burns.
3. If eye is burned by creosote or other chemicals, place mineral oil (bland petrolatum) in eye after flushing with water, cover with sterile compress, and see doctor.



ELECTRICAL BURNS

Treat like other burns, but cover wider area because they are usually more extensive than they appear to be.

SUNBURN

Use vaseline if blistered.

EXCESSIVE HEAT

The following illnesses can be prevented by taking salt tablets frequently:

SUNSTROKE

CAUSE: Exposure to heat, particularly the sun's rays.

SYMPTOMS:

1. Headache
2. Dizziness



3. Red face
4. Hot, dry skin
5. Strong, rapid pulse
6. Very high temperature
7. Usually unconscious



FIRST AID:

1. Put victim in shade, lying on back, with head and shoulders raised, clothing removed.
2. Apply cold to head.
3. Cool body by wrapping in sheet and pour cold water on small portion at a time; or use cold cloth, or cold cloths and ice bags.
4. Rub limbs toward heart through sheet.
5. Give cool drinks, no stimulants.
6. Call doctor.

HEAT EXHAUSTION

CAUSE: Exposure to heat, either outdoors or indoors.

SYMPTOMS:

1. Pale face
2. Dizziness
3. Vomiting
4. Profuse sweating
5. Moist cool skin

6. Weak pulse
7. Low temperature
8. Faint but seldom unconscious for long

FIRST AID:

1. Lie down, keep head level or low.
2. Drink solution of $\frac{1}{2}$ teaspoon salt in $\frac{1}{3}$ glass of water until 1 tablespoon salt is consumed in 6 drinks.
3. Give coffee or tea.
4. Apply external heat in severe cases.
5. Remove victim to circulating air.

HEAT CRAMPS

SYMPTOMS: Extreme pains in abdominal muscles or limbs

FIRST AID: Same as for heat exhaustion, plus firm pressure on the muscles.



Injuries Due to Cold

FROSTBITE

SYMPTOMS:

1. Considerable pain in hands and feet, but not in cheeks, ears, nose
2. Grayish white color due to frozen tissues

FIRST AID:

1. Until victim can be brought indoors, cover part with woolen cloth or warm skin of victim or first aider.
2. Bring into warm room, but avoid direct heat.
3. Give him warm coffee.
4. Thaw out frozen part gradually in warm room, or in luke warm water 72-78° F. (Cold water faucet usually this temperature.)
5. Gentle massage near, but not on frosted part with coarse dry towel, starting near body and working to tip to restore circulation.



PROLONGED EXPOSURE TO COLD

SYMPTOMS:

1. Victim becomes numb, drowsy.
2. He staggers, eyesight fails, and he becomes unconscious.

FIRST AID:

1. Place him in warm room and apply Back Pressure-Arm Lift Method if breathing has stopped.
2. When victim reacts, raise room temperature slowly.
3. Give him hot drink of coffee and put him in warm bed.
4. If only chilled and not unconscious, put him in warm bed and give hot coffee.



SNOWBLINDNESS

PREVENTION: Wear dark glasses in snow country, particularly in early spring and at high elevations.

SYMPTOMS:

1. Burning, smarting, sandy feeling in eyes
2. Pain in eyes or forehead
3. Sensitivity to light, eyes watering



FIRST AID:

1. Cold compresses on eyes.
2. Wash eyes with boric acid solution.
3. Mineral oil in eyes.
4. Wear dark glasses.



Bone Fractures

FRACTURE OF ARM OR LEG

SYMPTOMS OF SIMPLE FRACTURE:

1. Victim may hear or feel bone snap, and grating.
2. Pain and tenderness at break.
3. Inability to use injured part or to move adjacent joints.
4. Broken part may be swollen and deformed, discolored.



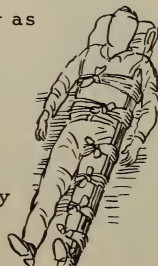
SYMPTOMS OF COMPOUND FRACTURE:

1. Same as above, plus presence of wound extending from fracture through the skin.
2. Fractured bone may protrude.
3. Frequently there is severe bleeding.



FIRST AID:

1. If doctor is nearby, do not move broken limb or patient. Keep broken ends and adjacent parts quiet.
2. If bleeding, cut away clothing and control flow by sterile compress, then bandage. Use tourniquet, TNT, only as last resort. See page 6.
3. If necessary to move, have splints, pads, and ties ready, then:
 - a. Give complete immobilization to fractured bone and next joint in either direction from fracture, by well padded splints.



- b. If the long leg bones are broken and victim must be moved some distance to doctor, apply traction splint, unless bone is protruding, in which case immobilize leg by placing sterile dressing over wound and splinting in place. See page 33.

4. After splint is in place, examine every 20 minutes to be sure limb swelling has not cut off circulation.

SKULL FRACTURE AND CONCUSSION

SYMPTOMS:

1. Bump or cut on head
2. Victim dazed or unconscious
3. Bleeding from ears, mouth, nose
4. Pulse rapid and weak
5. Pupils of eyes may be unequal in size.

FIRST AID:

1. Keep victim lying down, warm.
 - a. If face normal color or flushed, raise head and shoulders.
 - b. If face is pale, lower head slightly
2. Move only if necessary, and then horizontally.
3. Give no stimulants.
4. Apply sterile gauze and bandage to open scalp wound.
5. If strangling from blood and mucus, lower head and turn to drain.



6. Get doctor as soon as possible.
7. Do not leave alone.

SPINE FRACTURE

SYMPTOMS:

1. Pain in neck or back
2. There is no interference of hands or feet unless spinal cord is injured. If victim cannot open and close fingers readily, or grasp your hand firmly, his neck may be broken. If he can move fingers, but not feet or toes, his back may be broken.
3. Severe shock
4. If unconscious and spinal injury is suspected, treat as neck fracture.

FIRST AID:

1. Don't let victim move, lift head, or drink water.
2. Cover with blankets.
3. Get doctor.
4. If doctor is not readily available, and victim with fractured neck must be moved, method will depend on materials available. Face up on rigid surfaces, face down on non-rigid surfaces. Transport neck injuries face up always.
 - a. Do not tilt head forward, backward, or sideward under any circumstances.
 - b. Several people should slide him face-up on wide board or other rigid support.
 - c. Head should be well padded at sides to keep face upward.



- d. Tie hands across chest, and tie head and body rigidly to board.
5. When moving victim with fractured back, tie to rigid support with pad under lower spine.
6. Blanket lift can be used if victim stays face down.
7. Never permit a victim with suspected spine fracture to get in sitting position



PELVIS FRACTURE

SYMPTOMS:

1. Much pain around pelvis if standing or walking. May have little or no pain if lying down.

2. Severe shock

FIRST AID:



1. Move victim on back on rigid stretcher, door, board.
2. Bandage knees and ankles together.
3. Bend or straighten knees, whichever is most comfortable.

RIB FRACTURE

SYMPTOMS:

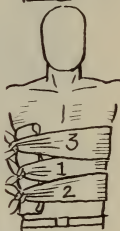
1. Severe pain on deep breathing or coughing
2. Break may be felt by fingers on rib.
3. Shallow breathing

4. If lung punctured, frothy bright red blood may be coughed up.

FIRST AID: Objective is to control pain, and restrict rib motion.

1. If lung is punctured, or rib is broken, do not bandage. Have victim lie quietly; move him lying down to doctor.
2. Apply 2 or 3 triangular cravat bandages around body.

- a. Tie first one loosely over break with knot over a pad, on side opposite break. As victim exhales, tighten knot.
- b. Repeat a above with 2 more cravats, one above, one below, first one.



NOSE FRACTURE

1. Do not splint.
2. Apply sterile compress if wounded, held lightly in place with 4 tail bandage.



LOWER JAW FRACTURE

1. Place palm of hand below jaw and raise it gently to bring teeth together.
2. Support jaw with bandage under chin, tied on top of head.
3. If victim vomits, release bandage, support jaw with hand, and rebandage.



COLLARBONE FRACTURE

SYMPTOMS:

1. Fracture can sometimes be felt by finger.
2. Injured shoulder lower.
3. Victim usually cannot raise arm above shoulder.



FIRST AID:

1. Put arm in triangular bandage sling, with hand raised above elbow level and ends of fingers uncovered.
2. Tie arm snugly to side of body.



ELBOW FRACTURE

1. If arm straight, apply fixation splint entire length of arm.
2. If arm bent, apply arm sling and bind upper arm to body as directly above.



HAND OR WRIST FRACTURE OR CRUSHING

1. Apply padded splint to front of hand, from middle to beyond finger tips.
2. Place arm in triangular bandage sling, palm down, with hand 4 inches higher than elbow.



FINGER FRACTURE

1. Immobilize by splints and ties.
2. Support hand, slightly raised, in sling.



KNEECAP FRACTURE

1. Straighten limb.
2. Tie limb to well padded 4 inch board reaching from buttock to heel, leaving kneecap exposed. In emergency a pillow or blanket can be used instead of board.

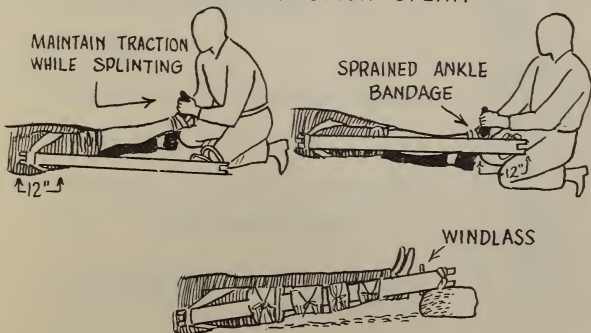


FOOT AND TOE FRACTURE OR CRUSHING

1. Remove shoe and stocking, by cutting if necessary.
2. Apply several dressings padded with cotton, or a small pillow, bandaged snugly in place.



IMPROVISED TRACTION SPLINT



Dislocations – Sprains – Strains – Bruises



DISLOCATIONS

SYMPTOMS:

1. Intense pain
2. Deformity
3. Swelling
4. Loss of movement



FIRST AID:

1. Apply cold compresses.
2. If necessary to move victim, support dislocated elbow or shoulder in loose sling; if hip dislocated, place pillow under knees.
3. Keep other dislocations immobilized in dislocated position, except first two finger joints or jaw, which can be reduced as shown in sketch.



SPRAINS

SPRAINS ARE TEARS OF LIGAMENTS SUPPORTING A JOINT.

SYMPTOMS:

1. Pain at joint
2. Swelling
3. Discoloring



FIRST AID:

1. Elevate the part, if practical, by putting wrist in sling, ankle on pillows.

2. Apply cold applications, ice, or running water, in early stage up to 6 or 8 hours; hot applications later.
3. If 1 and 2 cannot be done, immobilize part as much as possible by bandaging. Keep injured part quiet.



STRAINS

STRAINS ARE INJURIES TO MUSCLES OR TENDONS.

SYMPTOMS:

Pain in muscles, increasing stiffness

FIRST AID:

1. Rest injured muscle.
2. Apply heat, but don't blister.
3. Gentle rubbing upward on injured part.
4. Massage to loosen up muscles.



BRUISES

SYMPTOMS:

Pain, swelling, discoloration

FIRST AID:

- 1 Apply ice or cold cloths immediately to reduce swelling and relieve pain.
2. Elevate injured part.
3. If skin is broken, treat as any open wound.



Wounds and Bandaging

ALL WOUNDS, NO MATTER HOW SMALL SHALL BE TREATED TO PREVENT INFECTION. WHEN BLEEDING IS NOT SEVERE, INFECTION IS THE CHIEF DANGER. UNCLEAN FIRST AID IS MORE DANGEROUS THAN NO TREATMENT AT ALL, EXCEPT IN CASE OF SERIOUS BLEEDING. See page 5.

FIRST AID:

1. If doctor is nearby, cover wound with sterile pad, then bandage and take victim to doctor, if serious.
2. In isolated areas, if possible thoroughly wash wound with soap and water, then cover with sterile pad and bandage, otherwise cover and bandage until washing can be done later.
3. If wound is large enough so that it will have to be sewed up:
 - a. After washing, cover with sterile gauze, then bandage and take victim to doctor.
 - b. If doctor cannot be reached for several hours, after washing, close wound by finger pressure and apply butterfly taping, then bandage.
4. Small wound dressings need not be changed for several days, unless infected.

BANDAGING

1. Always apply sterile gauze pad directly on wound, then bandage over this.



2. Never use absorbent cotton or adhesive tape directly on a wound, except a narrow bridge of adhesive, sterilized over flame, to hold wound edges together.
3. Use a square knot and tie where easy to reach.
4. Bandage snug but not tight; ends of fingers and toes uncovered, if possible, to check on constriction.



PUNCTURE WOUNDS

1. Encourage bleeding by mild pressure.
2. Apply sterile pad and bandage.
3. Always get doctor to clean wound to prevent lockjaw.



GUNSHOT WOUNDS

1. Stop blood flow.
2. Apply sterile dressing and bandage.
3. Immobilize fractures.
4. Treat for shock.
5. Get victim to doctor for thorough examination and lockjaw prevention.



ABDOMINAL WOUNDS

1. Keep victim warm, on back.
2. Give him nothing to drink.

3. Do not clean wound, Cover with sterile dressing and bandage.
4. If intestine is protruding, don't push it back in:
 - a. Cover with sterile dressing kept moist with warm salt water, 1 teaspoon to a pint.
 - b. Raise knees.



5. Get to hospital quickly, treating for shock enroute.

ANIMAL BITES

1. Wash wound thoroughly with soap and water.
2. Apply sterile pad and bandage.
3. Consult doctor about rabies shots.



EYE WOUNDS

Object imbedded in eye or surrounding tissues:

1. Apply sterile pad and bandage, loosely if eyeball is injured; firmly otherwise.
2. Get to doctor.

To remove object not imbedded in eye:

1. Pull down lower lid to see if object is there.
2. If so, remove it gently with handkerchief corner.



3. If not, grasp upper eyelashes, have victim look upward, and pull upper eyelid forward and downward over lower eyelid.
4. Flush out eye with $1/2$ teaspoon of boric acid in glass of water.
5. If object still there put mineral oil in eye.

OBJECTS UNDER SKIN AND NAILS

1. Apply antiseptic, such as tinctures of merthiolate, zephiran, alcohol.
2. Sterilize needle, knife, or tweezers in flame, then remove object.
3. Encourage bleeding by gentle pressure.
4. Apply sterile pad and bandage.
5. If splinter breaks off under nail, scrape nail thin, then cut out V-piece over splinter, remove as above, if patient cannot be taken to doctor within 12 hours.



BLISTERS

1. Wash with soap and warm water.
2. Sterilize needle over open flame.
3. Puncture blister at edge.
4. Gently press out water or blood with sterile pad.
5. Apply sterile bandaid or dressing.
6. If blister has broken, wash dry with sterile gauze, apply sterile bandaid.
7. If blister develops deep infection, see doctor at first indication.



INFECTED WOUNDS

SYMPTOMS:

1. Throbbing pain and heat
2. Extreme swelling, redness
3. Pus and red streaks
4. Tenderness, fever

FIRST AID:

1. Rest in bed.
2. Hot applications of 3 heaping table-spoons of salt in 1 quart of water, preferably by putting infected part directly in the solution.
3. Change often enough to keep hot, and continue for an hour.
4. Elevate part, then repeat hot application in 3 or 4 hours.
5. Repeat process until doctor can be seen.



Medical Emergencies

HEART FAILURE

SYMPTOMS:

1. Resembling fainting, look for:
 - a. Pale face.
 - b. Weak pulse.
 - c. There may be pain around heart or pulsating pain down arms.
 - d. Failure to recover rapidly.
2. Showing pain, look for:
 - a. Violent agonizing pain around heart.
 - b. Usually behind upper breast bone.
 - c. Great fear unless unconscious.
3. With shortness of breath, look for:
 - a. Red face.
 - b. Victim cannot lie down; is conscious.

FIRST AID:

1. Keep victim absolutely quiet and lying down, unless he cannot breathe.
2. Give coffee or tea.
3. Keep him warm.
4. Reassure victim.
5. Call doctor.



APOPLEXY

APOPLEXY OR STROKE RESULTS FROM RUPTURE OF A BLOOD VESSEL IN THE BRAIN.

SYMPTOMS:

1. May follow overexertion, especially if victim is over 50.
2. Face red, but sometimes ashen gray.
3. Pulse slow but strong.
4. One eye pupil often larger than other.
5. One side of body limp.
6. Unconscious, breathing with difficulty.

FIRST AID:

1. Lay victim on back with head and shoulders raised.
2. Apply cold cloths or ice to head.
3. Keep warm, absolute quiet, don't move.
4. Call doctor.



FAINTING

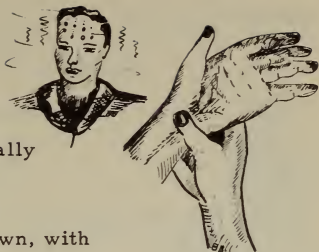
PREVENTION:

Victim should sit down and put head between knees, or lie down immediately.

SYMPTOMS:

1. Pale face, drooping eyelids
2. Perspiration

3. Dizzy
4. Shallow breathing
5. Slow, weak pulse
6. Unconsciousness finally



FIRST AID:

1. Keep victim lying down, with head lower than body.
2. Loosen tight clothing.
3. Sprinkle cool water on face or use ammonia inhalant on nose unless bleeding.
4. Keep him resting until fully recovered.

EPILEPSY

SYMPTOMS:

1. Fit may or may not come with warning.
2. Pale face, eyes roll up.
3. Victim falls to ground, utters hoarse cry.
4. Turns blue, bites tongue, loses consciousness.
5. Jerks head, arms, legs wildly.
6. Froths at mouth.
7. May become conscious, or else pass into deep sleep in 2 to 30 minutes.

FIRST AID:

1. Prevent victim injuring himself by putting cloth in mouth.
2. Put pillow or coat under head, but do not restrain him.
3. Give no stimulant.
4. Let him rest undisturbed after attack.

APPENDICITIS

SYMPTOMS:

1. Pain over all or part of abdomen
2. Nausea and vomiting
3. Pain and tenderness in lower right part of abdomen

FIRST AID:

1. Put victim in bed.
2. Don't give food, water, or laxative.
3. Apply ice bag to relieve pain.
4. Call doctor.



HERNIA

PREVENTION:

1. Get firm footing and handholds when lifting.
2. Lift with your leg muscles, not your back - back straight.
3. Don't twist when you lift.
4. Get help with heavy loads.
5. Avoid heavy lifting and straining.



SYMPTOMS:

1. Swelling in groin appears suddenly.
2. Swelling may disappear when victim lies on back.
3. Pain is often disabling.

FIRST AID:

1. Lay victim on back.
2. If hernia does not go back into place, lay him on stomach and bring his knees up under his chest.
3. Lay on back again and apply cold compresses to hernia, whether or not it went back into place.
4. Move him lying on back to doctor.



DIARRHEA

1. Put victim on tea or hot water and dry toast diet until he has no bowel movement for 24 hours.
2. Resume normal diet.

INTERNAL INJURIES

SYMPTOMS:

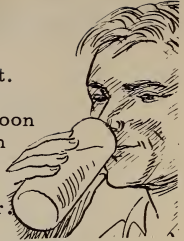
1. Nature and extent of injury usually is not clear.
2. Severe shock is often present.

FIRST AID:

1. Get a doctor.
2. Keep victim lying down, treat for shock.
3. Do not give him liquids or food.
4. Transport him carefully in a lying position.

COLDS

1. Rest in bed is best cold treatment.
2. If gargle is needed, use 1/2 teaspoon of salt and 1/2 teaspoon of soda in glass of hot water.
3. Drink a glass of liquid every hour.
4. Blow nose lightly and use handkerchief.
5. Eat light, easily digested foods.
6. If drug store available get 25 milligram antihistimine tablets and use them as directed every 4 hours, unless they produce drowsiness.
7. Call doctor if you have fever, chills, aches, or hard cough for over 24 hours.



BOILS AND PIMPLES

1. Do not squeeze.
2. Treat as an infected wound, with hot salt applications to draw to head.
3. Wipe off discharge with sterile gauze; apply sterile pad and bandage.

EARACHE

1. Do not allow victim to blow nose hard.
2. Apply hot water bottle to ear.
3. Drop in warm mineral oil.
4. If this not effective, try cold pads.



FOREIGN BODIES IN EAR OR NOSE

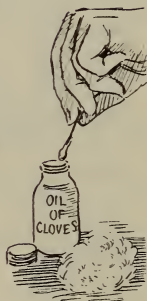
Insert warm mineral oil and let only doctor remove.

HIVES

Sponge area with calamine lotion or strong baking soda solution. If it persists, see doctor.

TOOTHACHE

1. If no cavities are visible, apply heat or cold to outside of jaw.
2. If there is cavity in tooth, clean out with cotton on end of toothpick.
3. Dip another piece of cotton in oil of cloves and insert in cavity.



STYES AND RED EYES

1. Cleanse eyes with $1/2$ teaspoon of boric acid in a glass of water.
2. Apply hot, not warm, compresses for 5 to 10 minutes.
3. Continue until relief comes.



Transporting Victims

DO NOT BE HURRIED INTO MOVING AN INJURED OR ILL PERSON. POOR METHODS CAN RESULT IN INCREASED INJURIES. VICTIMS OFTEN MUST BE MOVED LONG DISTANCES UNDER PIONEERING CONDITIONS, SO PLAN AND EXECUTE THE JOB CAREFULLY TO AVOID AGGRAVATING INJURY OR SHOCK. CONSIDER POSSIBILITY OF HELICOPTER EVACUATION WHERE DIFFICULT TRAIL TRANSPORTATION IS THE OTHER ALTERNATIVE.

PREPARATION:

1. Always give essential first aid before transporting, then there is not so great a hurry to move.
2. Make victim as comfortable as possible; loosen tight clothing, and always treat for shock. (See page 10)
3. To put blanket under victim, pleat $\frac{2}{3}$ of it beside him, grasp him at hips and shoulders, roll him about $\frac{1}{8}$ turn away from blanket. Push the pleated part under him, roll him back over the blanket and $\frac{1}{8}$ turn in other direction. Then pull blanket on through.
4. Be sure fracture cases are well padded.
5. If a compound fracture case has to be carried a long distance, traction splints on legs will help to decrease serious shock and make victim more comfortable. Watch for dangers of dislocation with too much traction. Traction is not used on arms except in rare cases where serious shock is expected.



6. Improvised stretchers are satisfactory for short distances, but for longer travel, especially through rough country, use the best equipment and manpower available, allowing for extra men to spell off the others.

- a. Folding type canvas or metal cots, or even chairs in some cases, are good emergency stretchers.



- b. An air mattress provides for greater comfort on a stretcher and therefore less shock danger.



- c. Wheel stretchers should be flown in and dropped if possible for back country stretcher cases.

LOADING:



1. To load or unload a stretcher, 3 bearers are needed, and a fourth is desirable.
2. Place stretcher close to victim, who is on back with feet tied.
3. Three bearers face victim's uninjured side, one at shoulder, one at hips, one at feet.
4. Bearers kneel on knees nearest victim's feet, place arms under victim, at neck, shoulder, back, thighs, legs, feet.
5. Bearer in command says "lift," all lifting victim together up on their knees. Bearer in command pushes stretcher against bearer's toes.
6. At his command, "lower," the bearers gently lower victim to stretcher.
7. Unloading procedure is reversed.



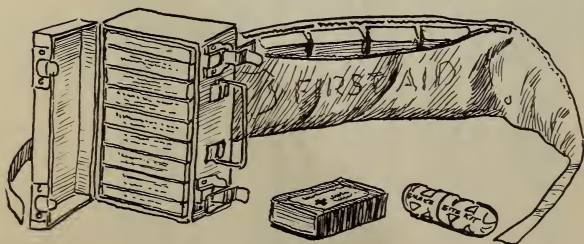
CARRYING:

1. To carry stretcher, bearers are on ends, and usually two on each side if terrain permits.
 - a. Stretcher is raised and started off on given signals.
 - b. The front and side bearers start on left foot, rear bearer starts on right foot.
 - c. Victim is carried feet first except when carrying up hills, steep grades or stairs.
 - d. Leg fracture victims are carried uphill feet first and downhill head first.
2. Rescue crew with a several mile carry should have 10-12 men, paired off according to size, with each pair carrying stretcher for 10-15 minutes.
3. Watch victim for increased signs of shock, and apply shock treatment; and check his dressings.
4. Victim is usually transported with head lower than body, unless head is injured or if breathing is difficult.
5. Victim should be able to see where he is going.
6. Serious cases should be transported lying down.
7. Be particularly careful with head injury cases. Victim with injury to back of head should be laid on his side.
8. Never jackknife an injured person into the back seat of a car.



First Aid Kits

1. Contents will vary with locality, type of work, and season, but kits giving adequate protection for the size of the crew shall always be available.
2. Approved first-aid kits shall be provided for each work project, guard station, lookout, etc. Contents of kits shall be handled by employees trained in first aid, as far as practicable.
3. First aid kits shall be inspected at least monthly during active field work, and maintained to at least the minimum standards listed below. Fire first aid kits shall be inspected after each fire. Opened bandages and dressings shall be replaced with sterile ones.
4. KIT SIZES:
 - a. No. 1 POCKET FIRST AID KIT - for use of 1 or 2 men, especially guards, foremen, trail and telephone workers, timber cruisers, fire and other crews, forest vehicles.
 - b. No. 2 TEN MAN FIRST AID KIT - to be carried on work projects, on trucks hauling crews, fire trucks, transports, and by first aid men on fireline duty.
 - c. No. 3 TWENTY FOUR MAN FIRST AID KIT - for use in fire and other work project camps. Larger camps should have available sufficient kits of above sizes to amply take care of first aid emergencies.



5. MINIMUM STANDARDS FOR FOREST SERVICE FIRST AID KITS

ITEM

*No. 1-1 Man No. 2-10 Man No. 3-24 Man

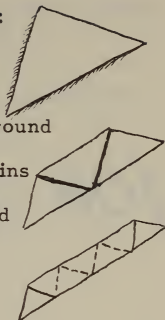
Bandage, Triangular 40" sterile incl. 2 safety pins				
" Compress 2" sterile 4 per unit pkg.	1 Unit	3	7	2 Units
" " " 1 " " "	" "	1 Unit	2	" "
" " " 1 " " "	" "	" "	2	" "
Absorbent gauze compress 24" x 72" sterile 1 unit pkg.	6 Band-aids	1 Unit	3	" "
Adhesive compress 1" sterile 16 per unit pkg.		1 " "	2	" "
Soap, bar or tube (Tincture green preferred) 2 per unit 1 bar or tube				
Eye dressing kit sterile incl. boric oint. 3 per unit			1	" "
Aspirin, box of 12 five-grain tablets	4 swabs	1 Unit	2	" "
Antiseptic applicators swab type 10 per unit pkg. (Tincture of Metaphen, Zephiran, Mercresin, or Merthiolate)		1	1	
Forest Service First Aid Guide			1	
Kit contents on card or paper	1	1	1	
Container box (canvas outside pouch optional) approx. size 2" x 2 5/8" x 4"				
" " metal moisture-and dust-proof, approx.		2 5/8" x 5" x 8 1/2"		2 5/8" x 9 1/2" x 10"
" " belt type		Optional	Optional	Optional
Snake bite kit	Optional	Optional	Optional	Optional

*Where men are serviced entirely by 10 or 24 man kits on the job, the one man kit can be eliminated or cut down to bare essentials, such as one or two 2" compresses, 4-6 band-aids in a cardboard box or pliofilm container.

6. USES FOR FIRST AID MATERIALS:

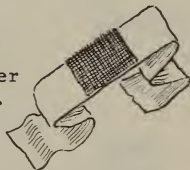
TRIANGULAR BANDAGES 40"

Bandages over sterile dressings
If sterile, for direct application over wound
Arm and hand sling
Pressure bandage for sprains and strains
Head, trunk, and large area bandaging
Padding for serious burns, freezing and splints
Ties for splinting broken bones
Traction ties for broken legs
Tourniquets for stopping bleeding



BANDAGE COMPRESS, 2" x 4" STERILE

Direct application on wounds
For applying direct pressure to stop bleeding
To cover mouth and nose of first aider to prevent infection of open wounds.

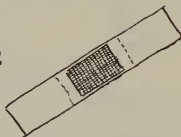


ABSORBENT GAUZE COMPRESS (24" x 72" STERILE)

Direct application on large wounds and burns

ADHESIVE COMPRESS, 1" STERILE

Direct application on minor wounds
Taping foot or hand abrasions to prevent blistering and infection



SOAP, BAR OR TUBE

To cleanse first aider's hands before applying first aid to wounds
To cleanse wounds



EYE DRESSING KIT

For loose bandaging of eyeball injuries



ANTISEPTIC APPLICATORS, SWAB TYPE

Apply to objects under skin or nails

Apply to tick bites



ASPIRIN



To counteract pain and relieve shock

7. OTHER FIRST AID SUPPLIES

Outlying stations not accessible to a doctor or drug store may want these materials, depending on their work hazards;



MINERAL OIL for eye, ear, nose injuries



EPSOM SALTS for poison treatment,
SODA, SALT for burns and poison

OIL OF CLOVES for toothaches



RUBBING ALCOHOL for aches, sprains,
strains

SALT TABLETS, ENTERIC COATED,
7 GRAIN - to combat excessive loss
of salt through sweating



SCISSORS, FORCEPS, NEEDLES

GENERAL

Other items such as cathartic, dysentery, and other pills, tannic acid applications, shall be removed from kits. Other existing supplies of bandages, dressings, vaseline gauze should be used up before converting to the new standards.

NO!

Injury Facts

A STUDY OF FOREST SERVICE INJURIES SHOWS:

1. MOST COMMON ONES -

CUTS first, followed by
SPRAINS AND STRAINS
BRUISES
FRACTURES
PUNCTURE WOUNDS

2. PART OF BODY USUALLY HURT -

HANDS or FINGERS first, followed by
FEET or TOES
LEGS
HEAD
BACK

3. AVERAGE FREQUENCY OF INJURIES:

9 disabling ones each week
5 first aid cases daily; many more not recorded
3 people hurt in car wrecks every month
1 eye injury every 3 days
1 infection every 4 days
1 hernia every 6 weeks
1 out of 4 injuries caused by hand tools -
 1 every 5 hours - remedy - instruction in tool use
1 out of 7 injuries caused by persons falling -
 1 every 8 hours - remedy - watch your step
1 out of 9 injuries caused by handling objects -
 1 every 10 hours - remedy - learn how to lift
1 out of 13 injuries caused by falling objects -
 1 every 15 hours - remedy - be alert
A third of our injuries occur in July, August,
September

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NOTES

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NOTES

FOREST SERVICE, U.S.D.A. LOCATION OF INJURIES



KEY POINTS TO REMEMBER

BLEEDING

DIRECT PRESSURE FIRST
PRESSURE POINTS
TOURNIQUET LAST-TNT-DANGER

BACK PRESSURE ARM LIFT

PLACE HANDS 12
APPLY PRESSURE TIMES
RELEASE PRESSURE A
LIFT ARMS MINUTE

POISON CURE

FILL DILUTE
DRAIN WASH
REFILL OR OUT

SNAKE BITE

CONSTRICTION OR LIGATURE
SUCTION OR COOLING
INCISION

SHOCK

POSITION-RAISE LEGS 12 INCHES
HEAT - PREVENT SHIVERING
FLUIDS - WARM

LARGE BURNS

DRY STERILE DRESSING
SEVERAL LAYERS

FRACTURE

SPLINT BROKEN BONE ENDS
SPLINT JOINTS NEXT TO BREAK

WOUNDS

WASH - SOAP AND WATER
STERILE DRESSING
BANDAGE

UNCONSCIOUS

FACE RED - RAISE HEAD
FACE PALE - RAISE TAIL
BLUE - ARTIFICIAL RESPIRATION

STRETCHER COMMANDS

DESCRIBE ACTION
SAY "READY"
ACTION

When in doubt, always treat as worst possible injury

REMEMBER! YOU'RE NOT A DOCTOR!